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Mr. Paul E. Stacey  
Department of Environmental Protection  
Bureau of Water Protection and Land Reuse  
Planning & Standards Division  
79 Elm Street  
Hartford, Connecticut, 06106-5127

February 4, 2010

BUREAU OF WATER PROTECTION AND LAND REUSE  
OFFICE OF THE BUREAU CHIEF

**FEB 04 2010**

Re: Proposed Streamflow Standards and Regulations

Dear Mr. Stacey:

The purpose of this letter is to provide written comment from Aquarion Water Company of Connecticut (Aquarion) regarding the Proposed Stream Flow Standards and Regulations released by DEP for Public Notice on October 13, 2009. These comments supplement those provided to the Department on March 11, 2009 (attached) related to the *Streamflow: The Next Two Decades – Balancing Human Use and Ecological Health* document published by DEP in January 2009.

Aquarion is the largest water company in the State serving approximately 580,000 people in 42 cities and towns in Fairfield, New Haven, Litchfield, Hartford, Middlesex and New London Counties. We provide water to these customers through 20 reservoirs and more than 25 well fields throughout the State. All of these customers will be impacted by the proposed Streamflow Standards and Regulations.

Aquarion takes pride in our stewardship of the environment and takes our responsibility for conservation and natural resource management very seriously. We recognize that the reservoirs and well fields that we use to meet the public's water supply needs impact the quantity and variability of flow in the State's streams and that these impacts may affect the stream's ecology. Conversely, the thousands of watershed acres that we preserve and protect help maintain natural stream flow and quality. As demonstrated below, we believe that the currently proposed regulations enhance streamflow at too great an impact to the other societal needs for water in the State.

When setting drinking water standards EPA assesses the frequency and level of occurrence of a contaminant and compares the public health benefit gained by its proposed standard to the cost of achieving that standard. The same should be done with these streamflow regulations. The frequency and extent of streamflow impairment caused by dams and other diversion structures in the State should be similarly identified and the costs and benefits of the proposed standards should be quantified.

Public Act 05-142 which requires DEP to propose these new streamflow regulations also requires that the regulations provide for public health, public utilities and water supply. While DEP has done a commendable job considering these issues, our fundamental concern with the regulations as proposed is that they do not meet the legislative requirement to adequately provide for public water supply. Until a comprehensive analysis has been done of the public water supply impacts and in-stream benefits of the regulations how can we say that we have achieved balance or adequately provided for public water supply?

Aquarion has spent considerable time and money assessing the potential impact of the proposed regulations on the 26 public water supply systems that we operate. As presented in more detail below, our analyses show that 10 to 30 percent of our reservoir supplies will be lost as a result of these regulations. The impact on groundwater withdrawals will be more site specific but is expected to range from no impact to complete summer withdrawal prohibitions. Water supply systems such as in Mystic and Litchfield will be forced into supply deficits and systems with adequate supplies such as Greenwich, Stamford, Darien and New Canaan will be left with barely enough water to meet current demands and unable to provide for the growth for which these communities are planning. Furthermore, systems such as our Greater Bridgeport system, which currently has excess supply and is looked to by Aquarion and others to help solve water supply problems throughout the region, will be forced to develop new supplies just to meet local needs. The pace, and potentially the extent, of economic development in Fairfield County and elsewhere in Aquarion's service territory will need to be controlled due to the lack of available water supply.

In addition to the loss of water available to serve residents, businesses and economic development throughout the State, the proposed regulations will have a real and significant impact on the cost of public water supply. Aquarion has estimated that we will need to invest approximately \$100 million in the facilities necessary to comply with the proposed regulations. This means that investment will be diverted from other water quality and infrastructure improvement needs. If applied evenly across the board this investment would result in an incremental rate increase of approximately 10% at a time when personal and municipal budgets can least afford to pay for it.

The Department of Public Health (DPH) is responsible for ensuring the purity and adequacy of public water supply in the State. In their January 21, 2010 comments on the proposed regulations, DPH recommends several significant revisions to the proposed regulations with the objective of ensuring that they adequately provide for public water supply. These recommendations include requirements for an evaluation of the impact of the proposed regulations on public water supply margin of safety, DPH concurrence on stream classification, creation of a Major Basin Flow Management Committee, and additional streamflow release reductions during water supply droughts. These recommendations require further clarification and development before being incorporated into the proposed regulations but are examples of how the regulations could be modified to better provide for public water supply.

Aquarion does not believe that the proposed streamflow standards and regulations meet the legislative requirements of PA 05-142 which authorized and required DEP to develop them.

Regardless of the requirements in PA 05-142 it would be irresponsible to promulgate regulations that eliminate approximately 20% of the State's reservoir drinking water supplies and significantly reduces available groundwater withdrawals without fully evaluating and accepting the impacts on a statewide basis and obtaining full concurrence from DPH. **Aquarion strongly urges DEP to withdraw the currently proposed streamflow standards and regulations and:**

- 1) Develop an initial Preliminary Stream Classification for rivers and streams in the State, at a minimum including those streams that are impacted by existing and potential future public drinking water supplies.
- 2) Complete development of the streamflow statistical tools necessary to determine required release rates and allowed flow alterations for all streams and rivers in the State (i.e. USGS StreamStats enhancements)
- 3) Reconvene the Commissioner's Advisory Group and necessary workgroups to improve the regulations to achieve adequate balance between public water supply and in-stream water needs considering recommendations and suggestions from public comment received on the currently proposed regulations.
- 4) Work with DPH and the water industry to quantify the impact of the revised regulations on the State's public water supplies and the citizens, businesses and economic development plans that depend upon them.
- 5) Quantify the in-stream benefits expected to be achieved by the regulations.
- 6) Achieve concurrence from DPH and DPUC that the revised regulations adequately provide for public water supply.

Detailed information regarding the impact of the proposed regulations on Aquarion's public water supply obligations is presented below, along with specific technical comments on the proposed regulations. These comments should be considered when further developing the regulations **but addressing these comments on their own is not considered sufficient to address Aquarion's concerns with the proposed regulations.**

## **IMPACTS**

### **Impoundments**

**Safe Yield** - Table 1 summarizes the approximate impact of the proposed regulations on the safe yield of Aquarion's reservoir supplies.

**Table 1**  
**Impact of Proposed Rule on Reservoir Safe Yield**

Reservoir System	Unadjusted Safe Yield (mgd)		Difference	
	Existing	Proposed	mgd	%
Mystic	0.97	0.68	0.29	30%
Lake Wangum	0.75	0.69	0.06	8%
Lakeville	0.21	0.16	0.05	24%
Stamford	15	14	1.2	8%
Greenwich	15	13	2.6	17%
Hemlocks System	37	31	6.2	17%
Trap Falls System	7.8	5.3	2.5	32%
Easton System	14	10	3.4	25%
<b>TOTAL:</b>	<b>91</b>	<b>75</b>	<b>16</b>	<b>18%</b>

It should be noted that the above analyses were based on reservoir models developed for evaluating these streamflow regulations and that the listed existing safe yields do not necessarily agree with the values reported in Aquarion's latest Water Supply Plan. However, the Table provides a reliable estimate of the magnitude of difference in safe yield associated with the proposed regulations. As indicated, the proposed regulations would result in a reduction in reservoir safe yield of approximately 16 million gallons per day (mgd) or 18%. This magnitude of loss cannot be offset by conservation or development of new groundwater supplies, which typically yield less than 1 mgd safe yield.

**Margin-of-Safety** - Table 2 presents the result of the above loss in reservoir yield on the 2010 average day margin-of-safety for their corresponding water supply systems, assuming that the streams below each of these impoundments is ultimately determined to be Class 3. Margin-of-safety is the unit less ratio of available water to demand that is utilized in the Public Health Code to assess the adequacy of water supply in a system. A margin-of-safety less than 1 means that there is insufficient water available to meet demands.

**Table 2**  
**Impact of Proposed Rule on Reservoir Margin of Safety**

Reservoir System(s)	Public Water Supply System	2010 AVERAGE DAY MARGIN OF SAFETY	
		Existing	2009 Proposed Streamflow Regulations
Hemlocks Easton Trap Falls	Greater Bridgeport	1.36	1.07
Dean's Mill	Mystic	0.99	0.85
Wangum	Norfolk	4.12	4.12
Lakeville	Salisbury	2.73	2.33
Stamford Greenwich	Southwest Ffld. County	1.12	1.01

Note that the existing margin-of-safety values in Table 2 are based on the unadjusted safe yield developed for this analysis and may be different than the margin-of-safety listed in the Company's Water Supply Plan.

As indicated in Table 2, the proposed regulations would reduce available water supply in the Mystic System from marginally meeting existing demands to a 15% deficit. The Southwestern Fairfield County Region (including New Canaan, Darien, Stamford and Greenwich) would be reduced from a 12% supply surplus to a marginally adequate supply to meet current demands. Demand reduction through conservation would help reduce these margin-of-safety deficits, but not eliminate them. Aquarion would need to consider measures such as moratoriums on new service connections to control demand growth in these communities until additional supplies could be developed.

In addition, supply in the Greater Bridgeport System would be reduced to significantly less than the 15% excess historically recommended as a guideline by DPH, and recommended by them for regulation (based on 20 year demand projections) in their comments on the proposed Streamflow Regulations. The Greater Bridgeport System, which has historically been looked at as a solution to regional water supply deficits, would therefore be unable to export water to solve other needs in the region and would need new supplies just to meet the needs of the communities within it, which includes:

- |              |             |            |
|--------------|-------------|------------|
| • Bridgeport | • Redding   | • Weston   |
| • Easton     | • Shelton   | • Westport |
| • Fairfield  | • Stratford | • Wilton   |
| • Monroe     | • Trumbull  |            |

The Greater Bridgeport System also exports water to Ridgefield, New Canaan, Darien, Stamford and Greenwich.

Margins-of-safety in the Norfolk and Salisbury systems would be less affected by the proposed regulations than the others in Table 2 because; in Norfolk available water is limited by treatment plant capacity rather than reservoir yield, and in Salisbury a significant portion of the yield is groundwater dependent. The impact of the proposed rule on groundwater safe yield is discussed later in these comments and is not included in Table 2.

**Reservoir Storage and Drought Frequency** – The proposed streamflow regulations will result in consistently lower reservoir levels in all surface water systems. Aquarion, like many other surface water dependent systems, uses available storage to define drought phases in its DPH approved Drought Response Plan. Customers in these systems would experience more frequent and longer duration drought restrictions as a result of the proposed streamflow regulations. Aquarion performed long term reservoir operation simulations to assess the impact of the proposed standards on reservoir storage and drought frequency. The results indicate that all reservoir systems will experience significantly more frequent and more severe drought restrictions. In the Stamford and Mystic systems, for example, the frequency of water supply droughts would increase to approximately once every 2 years and in Greenwich, drought restrictions would need to be imposed once every 3 to 4 years. These simulations also show that the Stamford, Mystic, Greenwich and Greater Bridgeport Systems would all have reservoirs that completely empty unless new sources and/or revised drought plans can be developed. The citizens and businesses of these communities would find it unacceptable to be under mandatory drought restrictions with these frequencies and

would become desensitized to the need to control demand during these times.

Lower reservoir levels would also impact reservoir aesthetics and recreation programs and could also impact associated upstream ecologies. The potential negative impacts to upstream ecologies should be considered in the recommended quantification of in-stream benefits. The drinking water quality impact of lower reservoir levels is not known, but could result in warmer water, more taste and odor problems and higher metals and dissolved organics concentrations.

## **Other Structures**

**Groundwater Withdrawals** - The public water supply impact of the proposed regulations on groundwater withdrawals will be very different than the reservoir release requirements. For groundwaters the rule will set a withdrawal limit that cannot be exceeded regardless of the climatic or natural streamflow conditions (unlike the impoundment portion of the rule which does not restrict reservoir withdrawals). The magnitude of the groundwater withdrawal impacts is difficult to assess without knowing the classification and flow statistics (e.g annual and bioperiod Q99s) of the associated rivers and streams. DEP has indicated that it has retained USGS to develop a tool to provide the required flow statistics and that this tool will be available in early 2010, shortly after the end of the public comment period for the proposed regulations. Regardless of these difficulties, Aquarion evaluated the impact of the proposed rule on several of its well fields utilizing the USGS STRMDEPL08 model with average well field and aquifer characteristics and an early draft of DEP's *Guidelines For Evaluating Streamflow Depletion From Groundwater Withdrawals*. The approach taken was approximately equivalent to the Tier 3 analysis in the latest draft *Guidelines*. Table 3 lists the lost Rearing and Growth capacity for the well fields evaluated compared to their actual historical maximum month withdrawals.

**Table 3**  
**Impact of Proposed Rule on Groundwater Withdrawals**

Wellfield	Historical Max. Month (gpm)	Lost Historical Capacity		
		Class I (gpm)	Class II (gpm)	Class III (gpm)
Rewak	222	206	140	59
Salisbury	178	120	0	0
Wire Mill	222	204	131	41
Eddy	239	158	0	0
Goshen	82	76	54	26
Hamill	105	104	102	99
Oxford	834	814	736	639
Lantern Hill	605	557	367	129
Stratton Brook	1,864	1,775	1,417	970
Tariffville Road	877	0	0	0
Nod Road	173	0	0	0
Lakeside	90	0	0	0
Coleytown	1,779	1,719	1,479	1,180
Canal Street	1,741	1,595	1,011	281
Oscaleta	128	128	128	128
Pettee St	208	195	144	80
Kent	94	93	91	87
Total (gpm)		10,490	5,801	3,719
Total (mgd)		15	8	5

As indicated in the Table, twelve of the seventeen well fields evaluated (70%) would have summer withdrawals restricted to less than their historical maximum month. Aquarion is unaware of streamflow impairment at these well fields that justifies such significant cutbacks. In total, depending on final stream classification, between 5 and 15 mgd of summer capacity would be lost in Aquarion's systems as a result of the proposed rule. The impact of the rule during the non-summer months and on groundwater safe yield, cannot be determined until bioperiod streamflow statistics are available.

**Surface Water Diversions without Impoundments** - Aquarion operates several stream diversions with limited or no impoundments (e.g. Morehouse Brook, Boy's Halfway, Converse Brook and North Poorhouse diversions). These are relatively small diversions constructed many years ago to re-direct all, or most, of the flow from a stream into a reservoir. In the proposed regulations these diversions would be regulated in the same way as groundwater withdrawals and required to limit diversion on any given date to a percentage of the stream's annual Q99. This type of flow control is not practical at these small remote sites and would essentially require that these diversions be eliminated. In some cases the resulting impact of implementing the regulations would be to dry up a stream or channel that has been flowing since the diversion was created in order to restore flow to a streambed that has been completely dry for many years.

**Surface Water Diversion with Limited Impoundments** - Aquarion operates two surface water withdrawals from impoundments with very little storage (West Pequonnock Diversion and Mianus Water Treatment Plant). In both cases water that is not withdrawn by Aquarion continues over a

dam and down the stream. These diversions would also be regulated in the same category as groundwater withdrawals with a maximum daily withdrawal in each bioperiod regardless of natural flows in the river. The operation of these supplies would be significantly impacted if they could no longer “flood skim” and take additional water when the river is flowing full.

## **Costs**

The analyses summarized above indicate that the potential impact of this rule is more than a cost impact. In many systems Aquarion’s level of service to its customers will be reduced and in some cases the ability to support needed economic development will be restricted. Even if there is adequate water supply available to compensate for the deficit that would be created if the draft release rule were implemented, the cost to Aquarion and its customers to develop the additional supplies and infrastructure necessary to make and monitor the required releases would be significant. Potential investment required by Aquarion would include:

- Dam modifications to make necessary releases at 17 dams.
- Monitoring devices to record daily releases from 17 dams.
- Elimination of non-viable stream diversions.
- Develop individual reservoir release plans to comply with the Flow Management Compact provisions of the regulation.
- Develop additional sources of supply to restore 15% Margin of Safety, potentially including:
  - Reactivation of the Housatonic Well field (Shelton)
  - Activation of the Cannondale Well (Wilton)
  - Development of the Maple Street Well field (Litchfield)
  - Increase in the approved capacity of Lantern Hill Well field (Stonington)
  - Development of currently unidentified groundwater sources (Kent)
  - Increase purchased water from RWA (Valley)
  - Increase purchased water from Torrington Water Company (Litchfield)
- Pumping, distribution and storage improvements and diversion permitting to transfer water from the Greater Bridgeport System to the New Canaan, Darien, Stamford, Greenwich and Ridgefield Systems.
- Perform well field modeling to assess impacts on streamflow.

The magnitude of the capital improvements is difficult to predict but is estimated at approximately \$100 million. If applied across the board this would equate to an incremental rate increase of more than 10% for each of Aquarion’s 175,000 residential, commercial, industrial and municipal customers. These customers will rightly demand to know the demonstrable ecological benefit that is being gained for this financial cost, impact on economic development and increased frequency and severity of drought restrictions.



## TECHNICAL COMMENTS

As stated above, Aquarion strongly urges the Department to withdraw the proposed regulations and weigh their impacts on public water supply against the expected ecological benefits to ensure that the appropriate balance between in and out of stream water uses has been achieved. The following are additional technical comments/questions that Aquarion believes should be addressed before finalizing the proposed regulations. We would like to re-iterate, however, that we do not believe that these changes, on their own, will be sufficient to adequately provide for public water supply.

- Section 26-141b-2 (35) – The definition of “Run of River” should be modified to make it clear that it refers to any impoundment from which there is no diversion.
- Section -3(c) Exemptions
  - -(12)(B) – Allows a minimum release of the lesser of 0.15 cfs or natural inflow. This same provision to limit releases to the natural inflow should be added to the other constant release provisions of the rule (e.g. < 3 sq. mi. watersheds, < 1 mile to downstream impoundments, Class 4 streams). More detail is needed regarding how natural inflow is calculated and the frequency with which flow changes are expected/allowed (e.g. daily based on yesterday’s median flow at a reference gauge, 1<sup>st</sup> and 15<sup>th</sup> of each month, etc.)
  - -(19) and (20) – The exemptions for small watersheds and short distances to downstream impoundments are not exemptions because they require releases that are not currently required. These should be considered special compliance cases and the provisions of Section -6(a)(4) to reduce releases during water supply droughts should apply.
- Similar to small watersheds and short distances to downstream impoundments, special compliance should be provided for dams with little or no storage that release a minimum of 0.1 cfs or natural inflow. These impoundments can’t use storage to supplement low flows and often spill naturally during storm events.
- Consider an exemption for other structures in very small watersheds to avoid prohibiting groundwater withdrawals near very small or intermittent streams.
- Provisions should be added to the regulations for impoundments that have infrequently used withdrawals. When withdrawals from these impoundments are not being utilized they operate as run of river impoundments and should not be required to make releases. When withdrawals are being utilized the impoundment should make the releases otherwise required by the rule from the time the impoundment stops naturally spilling until the time that it refills and spills again.
- Section -5(a) Adoption of River or Stream Classifications
  - Add consideration of average and maximum day public water systems margin-of-safety resulting from the classification
  - Classification of all streams below existing public drinking water supply impoundments should be provided a final classification of Class 3
  - -(12) “restoring stream flow patterns” should be replaced with “achieving ecological goals”

- Require concurrence from the Department of Public Health for streams whose watersheds include an existing or identified potential future source of public water supply.
- Include provisions for appeal of a final stream classification or change in stream classification
- Section -5(c) Petition to Change Classification
  - (1)(A) Petition to change a stream from a more altered to a less altered classification
    - Should require demonstration that there is no negative impact on a public water supply systems current or future margins of safety
  - (1)(B) Petition to change a stream from a less altered to a more altered classification
    - (i) change to "...cannot reasonably be satisfied..."
    - (iii) This section requires that best management practices (BMPs) including conservation and water reuse be applied prior to making a change in stream classification. In order to have some predictability of the re-classification outcome before investing in BMPs it should be sufficient to have an implementation plan, rather than requiring that implementation be complete. In addition, it is unclear what is meant by water reuse as a BMP and how this is in the control of the public water supply system who may be requesting a classification change.
  - (1)(C) This Section requires submittal of a complete diversion permit along with a petition to change the classification of a river or stream to accommodate a new source of supply. It is unreasonable to expect an applicant to incur the significant expense of developing a complete diversion permit application (e.g. property acquisition, well installation, pump testing, etc.) given the uncertainty of the stream re-classification process.
  - (1)(D)(i) This section requires identification of "the specific social needs of the municipality or municipalities within which the river or stream system is located that would not be met should the change in classification [to Class 4] not be approved..." There are many cases where the municipalities benefiting from a water withdrawal are not the same as the municipalities in which the stream is located. This provision of the regulation should be deleted.
- Section -6(a) Presumptive Standards - Impoundments
  - (a)(2) and (b)(1) provide interim compliance criteria for impoundments and other structures effective not later than five years after the effective date of classification for a river or stream segment. The intent of this phased implementation approach, as stated by DEP in *Stream Flow: The Next Two Decades* and other forums, is to provide time for adequate planning without causing undue disruption of the State's existing water systems. Unfortunately, the phased in approach, as proposed, does not achieve this objective. Almost all of the reduction in water system safe yield and margin of safety, and consequently all of the need for capital investment and development and approval of new sources of supply, drought contingency plans, interconnection agreements, water supply plan updates, etc. will occur with the first phase of implementation after five years. For impoundments this occurs because the interim

compliance period requires dry period releases and safe yield is determined based on available water during dry periods. For other structures the difference between interim and final compliance is the need to consider cumulative impacts (see comments related to Section (6)(b)(2)). In order to provide the orderly water supply and conservation planning efforts desired by DEP, the interim compliance requirements should be eliminated from the regulations and the full compliance schedule should remain at ten years from stream classification. In re-working the regulations perhaps incentives can be provided for earlier compliance, particularly for streams with identified flow impairment. Alternatively, extended compliance periods could be provided for systems with resulting margins-of-safety less than 15% or demonstrated need for significant capital investment.

- (a)(2)(A) Requires impoundments on Class 2 streams “to release seventy-five percent of such system’s natural inflow”. How is the inflow to be determined? How often are changes in release flows required?
- (a)(2)(C) Requires impoundments on Class 4 streams to release the greater of 0.1 cfs or the minimum required by the existing streamflow regulations. The intent of the Class 4 stream designation was to acknowledge that, in some cases, substantial flow alteration will be required to provide for public water supply and other lawful water uses. Requiring a minimum release of 0.1 cfs from existing impoundments can significantly reduce available safe yield and could lead to an inadequate water supply margin of safety. The regulations should provide for impoundments on Class 4 streams to continue to operate unaffected by the Stream Flow Standards and Regulations as is allowed for other structures. Furthermore, if the regulations are unchanged, it is unclear how, and at what frequency, the 0.1 cfs release should be compared to the requirements of the existing streamflow regulations. Is this a one time comparison? Is it monthly, as the existing regulations require? Is it on the 1<sup>st</sup> and 15<sup>th</sup> of each month as the presumptive standards for Class 3 streams require? Is it DEP’s intent to require impoundments subject to the existing regulations to continue to comply with those regulations and all other impoundments provide a constant 0.1 cfs release?
- (a)(4) Provides reductions in releases from impoundments in response to water supply droughts. This provision, which was not in early drafts of the regulation, provides significant protection of reservoir safe yield. Increasing the allowed release reductions, as suggested by DPH, or otherwise modifying this Section may be an effective way to further mitigate the rule’s impact on public water supply. Reduced release requirements based on margin-of-safety, percent safe yield utilized or days supply remaining would be additional approaches to providing releases when water is available and protecting safe yield when it is needed for public water supply. A Drought Avoidance trigger should also be added to proactively avoid public water supply droughts in addition to re-acting to them when they occur.
- Section -6(b) – Presumptive Standards – Other Structures (e.g. groundwater withdrawals)
  - In general, the level of flow alteration described by the presumptive standards for other structures seems inconsistent with the presumptive standards for impoundment releases. For example, the narrative standards define Class 3 streams as having flow moderately altered by human activity. For impoundments the presumptive standards define moderately altered as a constant flow equal to the natural BQ80 in the stream. For other structures the presumptive

standards define moderately altered as the natural flow in the stream minus 50% of the Q99. The standard for other structures is much more restrictive on withdrawals than the impoundment release requirement.

- The presumptive flow alteration limits are based on a percentage of the natural low flow in a stream and are applied evenly through the bioperiod regardless of natural streamflow conditions. The presumptive standards should be modified to allow greater withdrawals during periods of naturally greater streamflow. This approach would be consistent with the provisions for impoundments which provides for dry and wet period release rates.
- In bioperiods other than the Rearing and Growth Bioperiod, the allowed flow alteration by other structures is a function of the BQ99 and the Rearing and Growth BQ99. These flow statistics are not yet available so it is difficult to assess the impact of the proposed regulations on ground water safe yield and average day margin of safety. The proposed regulations should be delayed until these flow statistics are available and a complete public water supply impact assessment can be performed.
- The presumptive standards for other structures set limits for maximum stream flow alteration "on any day". It is unclear how these standards shall be practically applied to controlling withdrawals from groundwater diversions. DEP's draft *Guidelines For Evaluating Streamflow Depletion From Groundwater Withdrawals* implies that compliance is achieved if maximum monthly groundwater withdrawals do not deplete streamflow by more than the maximum allowed daily flow alteration. This should be clarified in the proposed regulations.
- If the streamflow regulations will set maximum monthly withdrawal limits on groundwater supplies, the Water Supply Planning regulations should be clarified to define how monthly withdrawal limits impact maximum daily available water. For example, if a wellfield is operated at its allowed monthly limit for the first three weeks of a month, it may not be able to be relied upon to provide its maximum daily capacity in the fourth week.
- Neither the regulations nor the draft *Guidelines For Evaluating Streamflow Depletion From Groundwater Withdrawals* provide adequate guidance for determining compliance for bedrock wells and wells in confined aquifers. Because it is difficult to evaluate the time and spatial relationships between these withdrawals and stream flow impacts, the regulations should provide an exemption for these structures.
- -(2) – Cumulative Compliance. The provision of the regulations that limits cumulative compliance by all diverters in a watershed remains impractical and, to our knowledge, unprecedented. Remaining unanswered questions include:
  - How will diverters in a watershed be identified and compelled to cooperate to achieve compliance?
  - How will multiple diverters determine cumulative stream depletion and at what points on the stream is this required?
  - Which diversions have precedence in developing a cumulative compliance plan?
  - How will regulations be enforced if non-compliance is the result of multiple diverters?

- What will be the impact on existing diverters if a new diversion is added to the watershed?

The cumulative compliance provisions is impractical and unreasonable and should be removed from the regulation.

- –(4). The reference to Section -6(a) should be expanded to include dams operated in accordance with Section -3(c)(19) and (20).
- Section -6(c) Variances
  - –(3)(A) Requires request for variance to compare rainfall statistics for the period of the requested variance to average rainfall over preceding years. How are rainfall statistics for the future variance period determined?
- Section -7 Flow Management Compacts
  - The framework of the proposed regulations is to provide narrative descriptions of the flow alteration allowed in each Class of stream and then to provide “one size fits all” standards that are presumed to comply with the narrative standards (i.e. Presumptive Standards). The regulations should be modified to allow the Commissioner to enter into a Flow Management Plan as an alternative to the presumptive standards based solely on a demonstration that the narrative standards have been achieved without the other onerous requirements of a Flow Management Compact. Specifically, it is inappropriate to require that Flow Management Plans that meet the narrative standards also be required to include restrictions on all diverters within the watershed (Sec. -7(b)(2)) and include best management practices to minimize flow alteration including conservation and water reuse (Sec. -7(b)(3)).

Flow management plans may be needed where the presumptive standards have unintended operational or ecological consequences, where multiple diversions are operated conjunctively, or where stream specific flow or ecological information is available. Aquarion is currently developing such a plan for the Saugatuck and Aspetuck Rivers in cooperation with The Nature Conservancy. The goal of the Saugatuck project is to develop flow rules based on river specific ecological studies that are at least equally protective of both the ecology and public water supply as the presumptive standards. Aquarion and TNC have spent considerable time and effort progressing the Saugatuck Flow Management Plan and will ultimately spend hundreds of thousands of dollars on its development. Implementation of the Aquarion/TNC plan is currently in jeopardy based on the requirements for Flow Management Compacts in the proposed regulations.

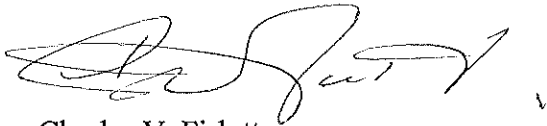
- Better definition of “minimally” and “moderately” altered flows and water levels, as used in the narrative standards, would be helpful for developing Flow Management Plans and Compacts. This could be provided through the regulations, or a peer reviewed guidance document.
- -(c)(6) If the Flow Management Plan or Flow Management Compact demonstrates consistency with the narrative standards it is unclear what is intended by this section.

- –(c)(7)(C) Not all of the listed information will be appropriate for all proposals. The last sentence of the Section should be modified to read “The proposal for a flow management compact shall provide the following information as appropriate:”
  - (v) This section requires information on development density and the degree to which BMPs have been applied to minimize the impact of impervious surfaces on stream flow. While impervious cover can significantly impact streamflow it is outside the control of most water suppliers and inappropriate information to require in a flow management plan or compact.
- Section -8 Record Keeping And Reporting Requirements
  - –(a)(7) Requires diverters to certify that they have a plan to make the infrastructure changes necessary to comply with the interim compliance requirements of the regulations within one year of stream classification. As stated earlier in this testimony, in many cases 5 years will be inadequate time to comply with the interim compliance requirements. Similarly, 1 year will be inadequate time to develop a compliance plan. This section should be removed from the proposed regulations.
  - –(c)(1) Requires diverters to report the daily amount of water diverted and, for dams, the daily amount of water released, for each day of operation. The amount of water diverted from an impoundment is not relevant to compliance with the proposed standards. It is therefore inappropriate to require reporting of diversion data from impoundments in this regulation. For other structures is the intent to report the quantity of water diverted, or the resulting alteration in stream flow?
  - –(c)(2) Requires reporting of the daily amount of water returned to the river or stream system. It is unclear what water is being referred to in this Section.

## SUMMARY

Aquarion commends DEP for their leadership and effort in developing the regulations to-date. However, based on our analysis of the impacts of the proposed regulation on Aquarion’s ability to meet its public service obligations, and our understanding of the impacts on the water supply industry in the rest of the State, we believe that the proposed Streamflow Standards and Regulations do not adequately provide for public health, public utilities and water supply, as required by PA 05-142. We urge the Department to withdraw the proposed regulations and continue to develop them in a way that adequately balances the public water supply impacts against the ecological benefits expected. We believe that the best way to achieve this goal is to utilize the same inclusive, multi-stakeholder process that has gotten us this far. While it may be unreasonable to expect that we will develop regulations that will have consensus support from all affected parties, it is critical to have concurrence from DPH and DPUC, the agencies responsible for regulating public water supply in the State. Aquarion would welcome the opportunity to continue to work with DEP to achieve this objective.

Sincerely,

A handwritten signature in black ink, appearing to read 'Charles V. Firlotte', with a stylized flourish at the end.

Charles V. Firlotte  
President and Chief Executive Officer

Enclosure

cc: J. Betkoski (DPUC)  
E. Gara (CWWA)  
M. Healey (OCC)  
L. Mathieu (DPH)